Soils Engineering Inc. Main Street Charlestown, New Hampshire 03603

John F. Kennedy, P.E.
Consulting Engineer

FALL MOUNTAIN MOTORS
SITE INVESTIGATION
SITE # 92-1221

This investigation is a follow up to an investigation conducted by James Shippee, during a fuel tank removal. Mr. Shippee's investigation revealed contaminated soils in the tank vicinity.

A) Monitoring Well Installation:

On October 13, 1992 a monitor well was installed at the site, at the Southeast corner of the former tank location. Site topography and local topography indicate this would most likely be downgradient of the tank, with respect to ground water flow. The well was installed using a hollow stem auger. Soil samples were taken at 5' intervals. Soil descriptions and photoionization meter readings are tabulated on the enclosed test boring logs. Soil samples at 25' were wet. The boring was advanced to 33' to ensure penetration into the water table and allow for seasonal fluctuation.

A 2" monitoring well was installed with a sand pack, bentonite seal above the 10' well screen, and a flush mounted water tight protective cover.

An odor was noted during drilling and sampling that was not a normal petroleum product smell.

B) Testing:

On October 15, 1992 water samples were obtained from the well. Samples were jarred for VOC testing using EPA Methods 8010/8020.

Area Code 603
826-5873

Results of testing indicated only one substance above quantitation limits. This substance was methylene chloride at a concentration of 87 parts per billion. This substance does not currently show up in the September 1992 Vermont Water Supply Rules, Table of Contaminants and the allowable levels. A phone call to the Water Supply Division confirmed this, however they plan to set a level of reported 5 parts per billion.

C) Probable Causes:

Methylene Chloride (or dichloromethene) is used as a refrigerant in compressors, a solvent for organic materials, and as a component in non flammable paint remover, solvent degreasing, among other applications.

You reported Fall Mountain Motors has not operated a body shop for over 10 years. Floor drains for your repair shop at the North end outlet to an oil and grit trap some 260' Northeast of the monitor well. Immediately North of the monitor well is a reported septic tank. Leaching trenches are reported to be 60' to 80' East of the monitor well. Historically sewage disposal has been just North of the monitor well. It should also be noted this is a filled site.

POTENTIAL GROUND WATER RECEPTORS

The two closest drinking water supplies are two bedrock wells Northwest of the site. The closest is Fall Mountain Motors own well, 290' Northwest of the monitor well. A second well,460' Northwest of the monitor well, serves the Blue Haven Guest House.

Bob Potter, of Fall Mountain Motors, reported bedrock at 35' to 40' during the drilling of their well. Well depth is 280'. This is a fairly new well. Previously Fall Mountain Motors was served by a well point located

East of their building and Northeast of the monitor well. This has been abandoned.

The house approximately 500' Southwest of the site is served by a spring at the top of the slope West of the site, as reported by the homeowner.

The Connecticut River is due East of the site. Its water level is lower than ground water observed in the monitor well. Topography indicates it is a potential receptor for surface and subsurface water from the site.

Enclosed are USGS topographic maps showing the site and immediate vicinity. Noted are the above mentioned well and spring.

RECOMMENDATIONS

Fall Mountain Motors should review their disposal procedures to ensure all chemicals, solvents, etc. are being containerized and can not be disposed of via sinks or drains to ground.

The well can be resampled early next year to verify presence of the contaminant and to check for any increase/decrease in concentration. A check can also be made on the drinking water.

Sincerely,

Warren L. Stevens, P.E.

WLS:sj

LABORATORY REPORT

CLIENT NAME: Soils Engineering
SITE LOCATION: Fall Mountain Motors
LABORATORY NO: 2-1755
PROJECT NO: 70183
ATTENTION: Warren Stevens

DATE OF SAMPLE: 10/15/92
DATE OF RECEIPT: 10/17/92
DATE OF ANALYSIS: 10/28/92
DATE OF REPORT: 11/12/92

PARAMETER	Mw-1	PQL's
Chloromethane	BPQL	1
Bromoform	BPQL	5
Bromomethane	BPQL	1
Dibromochloromethane	BPQL	1
Vinyl Chloride	BPQL	1
2-Chloroethylvinyl Ether	BPQL	5
Chloroethane	BPQL	1
Methylene Chloride	87	1
Trichloroethylene	BPQL	1
Trichlorofluoromethane	BPQL	1
1,1-Dichloroethene	BPQL	1
1,1-Dichloroethane	BPQL	1
c or t-1,2-Dichloroethylene	BPQL	1
Chloroform	BPQL	1
1,2-Dichloroethane	BPQL	1
1,1,1-Trichloroethane	BPQL	1
Carbon Tetrachloride	BPQL	1
Bromodichloromethane	BPQL	1
1,2-Dichloropropane	BPQL	1
t-1,3-Dichloropropene	BPQL	1
c-1,3-Dichloropropene	BPQL	1
1,1,2,2-Tetrachloroethane	BPQL	1
1,1,2-Trichloroethane	BPQL	1
Tetrachloroethylene	BPQL	1
Benzene	BPQL	1
Toluene	BPQL	1
Ethylbenzene	BPQL	1
Chlorobenzene	BPQL	1
1,4-Dichlorobenzene	BPQL	1
1,3-Dichlorobenzene	BPQL	1
1,2-Dichlorobenzene	BPQL	1
Xylenes	BPQL	1
Surrogate % Recovery	88/97	

EPA Method 8010 & 8020; All results reported as ug/l or ppb.
BPQL = Below Practical Quantitation Limit.
NOTE: Two early eluting unknown peaks on the Photoionization Detector Chromatogram

Respectfully Submitted,
SCITEST, INC.

Roderick J. Lamothe
Laboratory Director

RJL/cha

SCITEST
LABORATORY SERVICES

Soils Engineering Inc.

Main St. Charlestown, N. H. 03603

SHEET 1 OF 2
DATE 10/13/92
HOLE NO. MW-1
LINE & STA.
OFFSET

TO FALL MOUNTAIN MOTORS ADDRESS BELLOWS FALLS, VT
PROJECT NAME FALL MOUNTAIN MOTORS LOCATION BELLOWS FALLS, VT
REPORT SENT TO BOB POTTER PROJ. NO.
SAMPLE SENT TO RETAINED BY S.E.I. OUR JOB NO. 5553-92

GROUND WATER OBSERVATIONS

At 28' at * Hours
*WELL COMPLETION

At at Hours

	CASING	SAMPLER	CORE BAR.
Type	HSA	SS	
Size I. D.	4 1/4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 10/13/92
DATE COMPL. 10/13/92
BORING FOREMAN M.D. & R.H.
INSPECTOR
SOILS ENGR.

LOCATION OF BORING:

DEPTH	Casing Blows per foot	Sample Depths From — To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	To 12-18	Moisture Density or Consist.	Strata Change Elev.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, condition, hardness, Drilling time, seams and etc.	SAMPLE No.	Pen	Rec.
								1½"	ASPHALT PAVEMENT			
								4'	BROWN FINE SAND AND GRAVEL			
5'		5' - 7'	SS	3	4				MED. DENSE BROWN GRAVELLY FINE SAND	1	24"	12"
				4	4				0.8 PPM DOWN AUGER @ 5'			
		7' - 9'	SS	8	7				5 PPM @ 5' - 7' SAMPLE	2	24"	6"
				6	6				3.2 PPM @ 7' - 9' SAMPLE			
10'		10' - 12'	SS	6	7				42 PPM INSIDE AUGER @ 10'	3	24"	0"
				11	18			11'				
		12' - 14'	SS	14	18				DENSE OLIVE BROWN FINE SAND AND SILTY FINE SAND	4	24"	0"
				14	10				3.4 PPM IN AUGER @ 15'			
15'		15' - 17'	SS	10	11				MED. DENSE OLIVE BROWN LAYERS OF FINE SAND AND SILT	5	24"	18"
				11	10				68 PPM @ 15' - 17' SAMPLE			
20'		20' - 22'	SS	3	5		MOIST		LOOSE OLIVE BROWN SILTY FINE SAND	6	24"	18"
				4	5				7.5 PPM @ 20' - 22' SAMPLE			
25'		25' - 27'	SS	3	4		WET		LOOSE OLIVE BROWN FINE SAND AND SILT	7	24"	18"
				2	3				225 PPM @ 25' - 27' SAMPLE			
								28'				
30'		31' - 33'	SS	14	15				GREY SILTY FINE SAND WITH WOOD	8	24"	24"
				15	21				325 PPM ON SAMPLE			
								33'				
35'									INSTALLED 2" PVC MONITORING WELL AT 30'6"			
									SLOTTED 20'6" - 30'6"			
									FILTER SAND TO 20'			
									BENTONITE SEAL 19' - 20'			
									MATERIALS USED; (SEE PAGE 2 OF 2)			

GROUND SURFACE TO USED "CASING: THEN

140 lb. Wt. x 30" fall on 2" O. D. Sampler

Sample Type
D—Dry C—Cored W—Washed
UP—Undisturbed Piston
TP—Test Pit A—Auger V—Vane Test
UT—Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50 + Very Dense

Cohesive Consistency
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

SUMMARY
Earth Boring
Rock Coring
Samples

HOLE NO. MW-1

BRUNING 40-5020 70792

Soils Engineering Inc.

Main St. Charlestown, N. H. 03603

SHEET 2 OF 2
DATE 10/13/92
HOLE NO. MW-1
LINE & STA.
OFFSET

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Hammer Fall		30"	

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LOCATION OF BORING:

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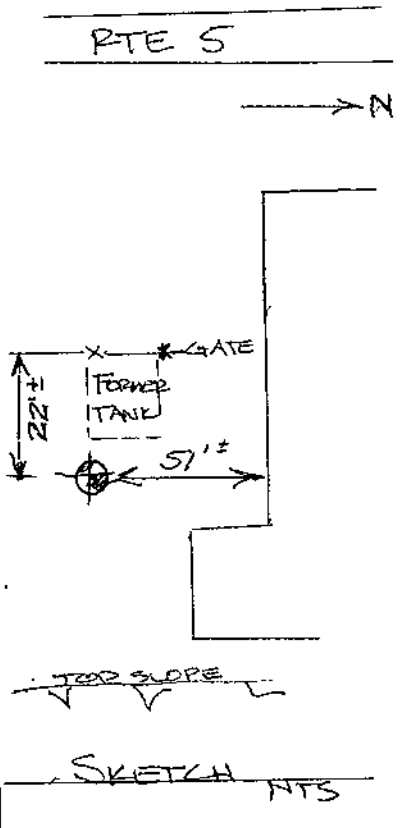
									MATERIALS USED:			
									10' OF 2" PVC 0.020" SCREEN			
									10' OF 2" PVC SOLID			
									25# OF BENTONITE CHIPS			
									250# OF SAND			
									1 MONITORING WELL MANHOLE COVER			
									2 PVC SLIDE CAPS			
									40# OF CEMENT MIX			
									1/2 HOUR OF STEAM CLEANING			



SKETCH NTS

GROUND SURFACE TO 31' USED HSA "CASING: THEN DROVE SS 24"

140 lb. Wt. x 30"± fall on 2" O. D. Sampler

Sample Type
D—Dry C—Cored W—Washed
UP—Undisturbed Piston
TP—Test Pit A—Auger V—Vane Test
UT—Undisturbed Thinwall

Proportions Used			
trace	0	to	10%
little	10	to	20%
some	20	to	35%
and	35	to	50%

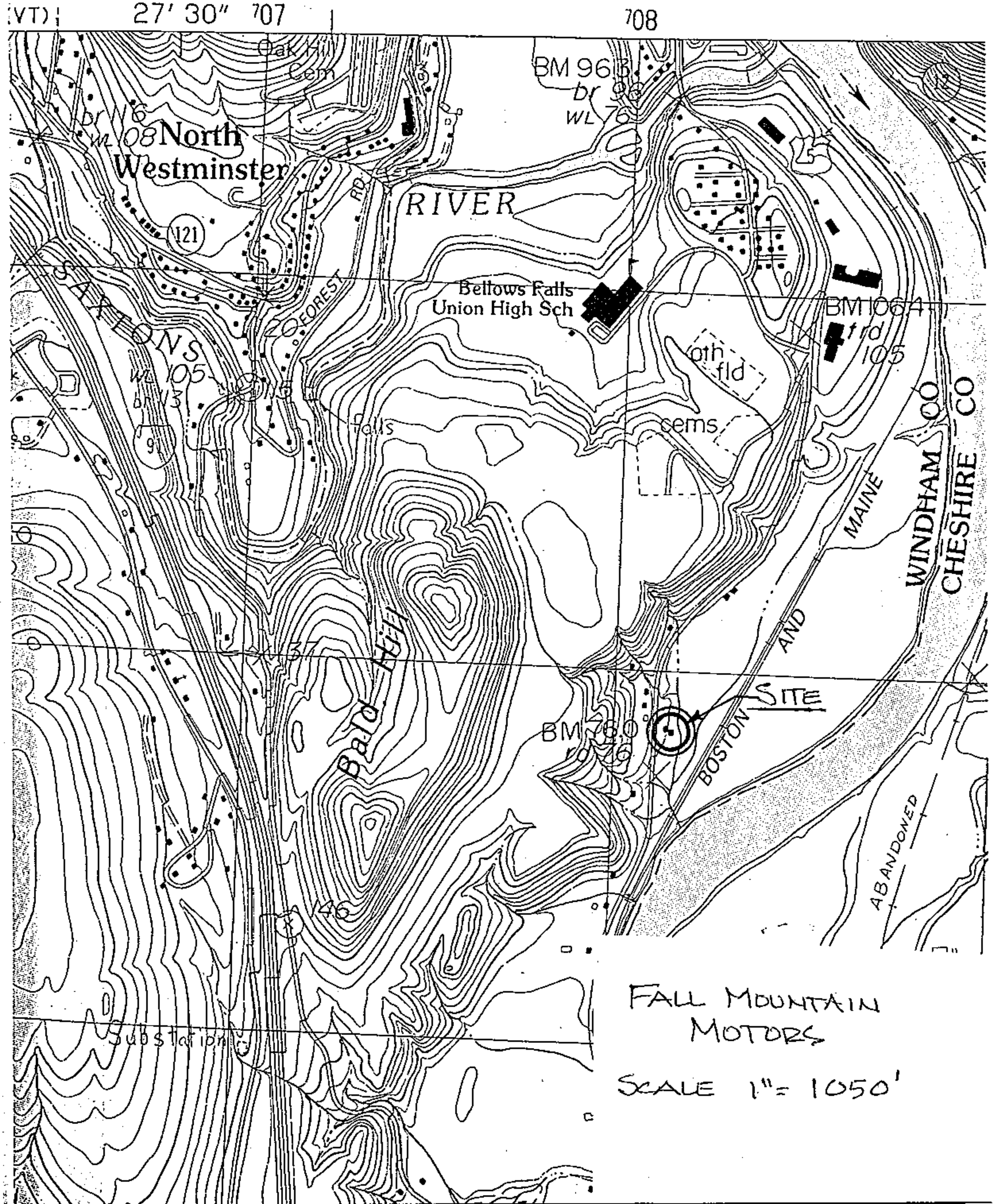
Cohesionless Density	
0-10	Loose
10-30	Med. Dense
30-50	Dense
50 +	Very Dense

Cohesive Consistency	
0-4	Soft
4-8	M/Stiff
8-15	Stiff
15-30	V-Stiff
30 +	Hard

SUMMARY
Earth Boring 33'
Rock Coring
Samples 8

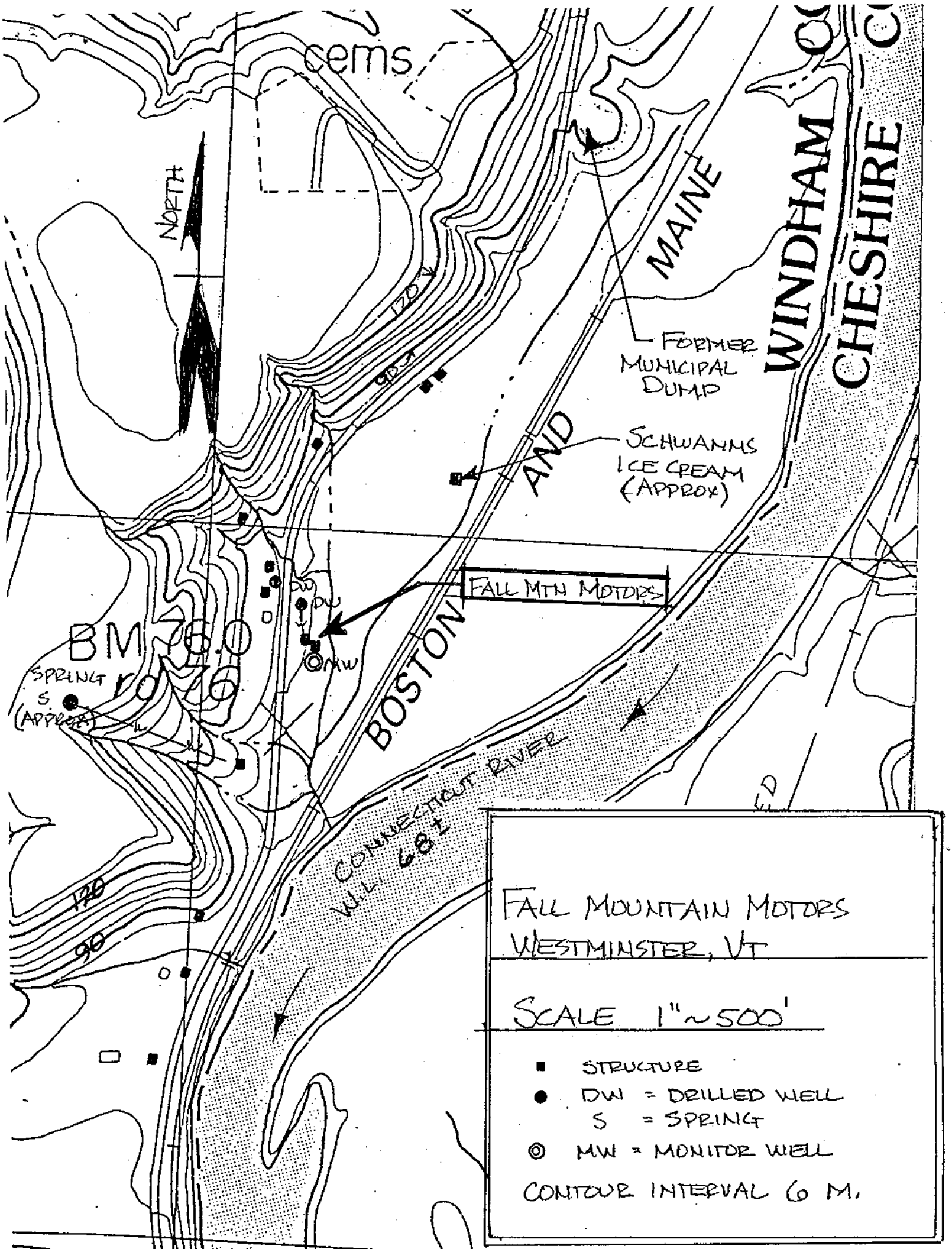
HOLE NO. MW-1

BRUNING 40-5020 70792



FALL MOUNTAIN MOTORS

SCALE 1" = 1050'


cems
NORTH
MAINE
WINDHAM
CHESHIRE
FORMER MUNICIPAL DUMP
SCHWANNS ICE CREAM (APPROX)
AND
FALL MTN MOTORS
BOSTON
BM 760
SPRING
S
(APPROX)
DW
MW
CONNECTICUT RIVER
EL. 681 ±
120
90
FALL MOUNTAIN MOTORS
WESTMINSTER, VT
SCALE 1"~500'
STRUCTURE
DW = DRILLED WELL
S = SPRING
MW = MONITOR WELL
CONTOUR INTERVAL 6 M.